

## **ABSTRACT**

A cross-flow ion mobility analyzer (CIMA) that includes a component of gas flow that opposes an electric field that is established within a channel, wherein ions are carried through the channel, wherein ions of a specific mobility are trapped by the opposing electric field and flow field within the channel and are detected when the ions reach the end of the channel, wherein a detector at the end of the channel sees a continuous stream of mobility-selected ions, and wherein different ions are selected by modifying the electric field and/or the velocity of the flow field.